

REMARKS

Reconsideration and withdrawal of the rejection and the allowance of all claims now pending in the above-identified patent application (*i.e.*, Claims 26 and 28-35) are respectfully requested in view of the foregoing amendments and the following remarks.

At the outset, it should be recognized that the present invention, as now claimed, provides a water conditioner, which includes a pipe and a substantially flat plate extending along a substantial portion of a length of the pipe. Further, the plate is to have a width that is substantially equal to an inner diameter of the pipe along an entirety of the length of the plate and with the plate being located within the pipe. A plurality of cylindrical posts pass through, and extend, at a solely normal angle from each side of the plate to be adjacent an inner wall of the pipe and perpendicular to the direction of flow through the pipe for causing water flowing through the pipe to adopt a torturous path, thereby providing a number of discreet paths through the water conditioner for an improved result.

As will be explained in greater detail hereinafter, nowhere in the prior art is such a novel and efficient water conditioner, which includes a substantially flat plate extending along a substantial portion of a length of the pipe and having a width that is substantially equal to an inner diameter of the pipe along an entirety of the length of the plate when located within the pipe, and which plate further includes a plurality of cylindrical posts passing through, and extending, at solely a normal angle from each side of the plate to be adjacent an inner wall of the pipe, along with the plurality of cylindrical posts being

perpendicular to the direction of flow through the pipe, for ensuring a torturous path of flow of water through the pipe, either disclosed or suggested.

By the present amendment, Applicant has amended independent Claim 26 (and all remaining claims via dependency) to now specify that the plurality of cylindrical posts passing through and extending from each side of the recited plate extend at --solely-- a normal angle relative to the plate, thereby excluding a direction that is other than perpendicular to the surface of the plate. Further, Claim 26 has been amended to make explicit that the cylindrical posts extending from the plate are perpendicular to the direction of flow through the pipe that is recited in the claims.

Turning now, in detail, to an analysis of the Examiner's prior art rejections of the third Office Action, initially, the Examiner has rejected independent Claim 26 and various dependent claims as being obvious, pursuant to 35 U.S.C. §103(a), over Brunner *et al.*, U.S. Patent No. 877,460, taken in view of Ehrfeld *et al.*, U.S. Patent No. 6,982,064. It is the Examiner's contention that the primarily-applied citation of Brunner *et al.* teaches Applicant's claimed fluid conditioner, including a substantially flat plate and posts, with the exception that Brunner *et al.* fails to disclose the "posts" as being cylindrical in shape. The Examiner has therefore secondarily-applied Ehrfeld *et al.* for its contended teaching that it is well known in the art to form flow conditioners with round posts (58a, 58b) which can pass through plates. The Examiner has therefore concluded that it would have been obvious to have modified the posts in Brunner *et al.*, in view of Ehrfeld *et al.*, so that some of the posts in Brunner *et al.* would be cylindrically-shaped,

thereby arriving at that which is claimed by Applicant.

In reply to the 35 U.S.C. §103(a) obviousness rejection applying Brunner *et al.*, taken in view of Ehrfeld *et al.*, the primary reference of Brunner *et al.* teaches an apparatus for separating liquids from gases and vapors which would appear to disclose a device similar in structure to Applicant's claimed invention in FIGS. 9, 10, 13 and 14 of Brunner *et al.* Referring to FIG. 9 of the applied citation, a hollow drum (*f*), through which liquid flows from the top of the structure (*g*) to the bottom (*h*) thereof, includes a series of partitions (*b*). While it is not clear from the quality of the drawing figures in Brunner *et al.*, and the text of the disclosure is not entirely clear, Brunner *et al.* explains at Page 1, lines 61-67, that "partition *b* . . . is arranged parallel to the direction of flow." In contrast to Brunner *et al.*, Applicant's invention, as now most broadly recited in independent Claim 26, states that the plurality of cylindrical posts are "perpendicular to a direction of flow through said pipe."

Consequently, Brunner *et al.* fails to teach or suggest Applicant's invention, as now claimed, notwithstanding the lack of Brunner *et al.* to disclosure the use of cylindrical posts. Further, with respect to the secondarily-applied citation of Ehrfeld *et al.*, this reference discloses a "micromixer" for the purpose of mixing – not separating – components of a fluid mixture. Ehrfeld *et al.*, Applicant respectfully states, is concerned with an apparatus and function that is diametrically opposed to the nature of Applicant's invention and that of the primarily-applied citation of Brunner *et al.*, such that the combination of Brunner *et al.* and Ehrfeld *et al.* should not be viewed as being proper.

In view of the orientation of the “posts” vis-à-vis the direction of flow as shown in Brunner *et al.*, as well as the distinctly different nature and function of the micromixer taught by Ehrfeld *et al.*, it is respectfully submitted that the 35 U.S.C. §103(a) obviousness rejection of independent Claim 26 (and dependent Claims 28-32), applying Brunner *et al.*, taken in view of Ehrfeld *et al.*, has now been overcome and should be withdrawn.

As part of the third Office Action, the Examiner has separately rejected independent Claim 26 (along with dependent Claims 28, 29, 30 and 32) as being obvious, pursuant 35 U.S.C. §103(a), over Bergmann, U.S. Patent No. 4,352,378, taken in view of Ehrfeld *et al.* Similarly to the prior obviousness rejection, the Examiner has contended that the primary reference of Bergmann, taken in view of Ehrfeld *et al.*, discloses Applicant’s fluid conditioner as comprising a pipe (1), a plate (7), which is located in the pipe and has at least one side of the plate having means for causing fluid flow to adopt a tortuous path through the pipe, and which further includes a plurality of posts (6) that extend from the top and sides of the plate. The Examiner has concluded that Bergmann discloses all of the recited limitations of Applicant’s fluid conditioner, again, with the exception of forming some of the posts as cylindrical posts and having such posts pass through the plate. The Examiner has therefore secondarily-applied Ehrfeld *et al.* for its contended disclosure that it is well known in the art to modify the posts of Bergmann so that the posts are cylindrical in shape and pass through the plate, according to the Examiner, as suggested by Ehrfeld *et al.*, thereby arriving at that claimed by the instant Applicant.

In reply to the Examiner’s 35 U.S.C. §103(a) obviousness rejection applying

Bergmann, taken in view of Ehrfeld *et al.*, the primary citation of Bergmann explains that the “teeth,” designated by reference numeral 6, are to “interdigitate with each other” and protrude from “two directions,” as best illustrated in FIGS. 4 and 5 of Bergmann, and as explained by Bergmann at Col. 3, lines 39-52. As recited by Applicant in independent Claim 26, and as now amended, the cylindrical posts pass through, and extend, at solely a normal angle from each side of the plate. By contrast, Bergmann teaches that teeth (6), or “posts,” are to protrude in two directions, both of which are not perpendicular, or normal, to the surface of the plate. (*See*, Bergmann at Col. 3, lines 42-46; FIGS. 2 and 3)

Regarding the secondarily-applied reference of Ehrfeld *et al.*, Applicant restates his previous contention that this prior art reference, which teaches a micromixer, is not properly considered in combination with art that is concerned with the separation of components from, or the purification of, liquids. Notwithstanding the contended inapplicability of Ehrfeld *et al.*, Applicant respectfully submits that the dissimilarity between what is presently claimed and that taught and suggested by Bergmann renders the present invention, as now claimed, patentably distinct over the combination of Bergmann, taken in view of Ehrfeld *et al.*

Accordingly, withdrawal of the Examiner’s 35 U.S.C. §103(a) obviousness rejection of the third Office Action, which applies Bergmann, taken in view of Ehrfeld *et al.*, is respectfully submitted to be appropriate and is respectfully requested.

The Examiner has separately rejected dependent Claims 31 and 33-35 as being obvious, pursuant to 35 U.S.C. §103(a), over Bergmann, as the primarily-applied refer-

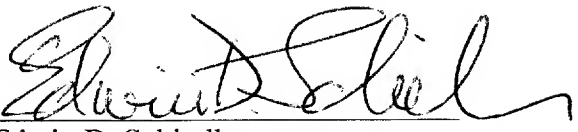
ence, and taken in view of Ehrfeld *et al.*, and in further view of additional prior art. Applicant respectfully submits that dependent Claims 31 and 33-35 are, likewise, patentable over the prior art for the reasons presented for the allowability of independent Claim 26 and, consequently, the subsidiary obviousness rejections of record should, likewise, be withdrawn at this time.

In view of the foregoing, it is respectfully contended that all claims now pending in the above-identified patent application (*i.e.*, Claims 26 and 28-35) recite a novel and efficient water conditioner, which includes a substantially flat plate extending along a substantial portion of a length of the pipe and having a width that is substantially equal to an inner diameter of the pipe along an entirety of the length of the plate when located within the pipe, and which plate further includes a plurality of cylindrical posts passing through, and extending, at solely a normal angle from each side of the plate to be adjacent an inner wall of the pipe, along with the plurality of cylindrical posts being perpendicular to the direction of flow through the pipe, for ensuring a torturous path of flow of water through the pipe, which is patentably distinguishable over the prior art. Accordingly,

withdrawal of the outstanding rejections and the allowance of all claims now pending are respectfully requested and earnestly solicited.

Respectfully submitted,

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Enc.: 1. Petition for Three-Month Extension of Time for Response; and,
2. EFT for \$555.00 (Three-Month Extension Fee).

The Commissioner for Patents is hereby authorized to charge the Deposit Account of Applicant's Attorney (*Account No. 19-0450*) for any fees or costs pertaining to the prosecution of the above-identified patent application, but which have not otherwise been provided for.